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GENOTYPE DESIGNATIONS OF THE GENERA *HYDROPHILUS* AND *HYDROCHARA*

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In an attempt to confirm the determinations of certain species of Hydrophilidæ from Porto Rico and the Virgin Islands, I referred to 'Coleopterorum Catalogus,' part 79, published in 1924, in which A. Knisch lists (p. 236) *Hydrophilus* Leach, type *caraboides* Linnæus, and *Hydrous* Leach (p. 242), type *piceus* Linnæus.

This classification does not agree with that of Leconte and Horn, nor with the usage of most American and many European authors. I therefore consulted the literature in order to find out to what authority Leach referred the above genera. Doctor W. Dwight Pierce happened to visit the Museum while this research was in progress, and he suggested P. A. Latreille's (1810) 'Considerations Generales sur L'ordre Naturel des Animaux' as a possible source. This publication, not referred to in Knisch's work, afforded (page 190, "Genus 119") a brief diagnosis of the genus *Hydrophilus*, and on page 428 of "Table des Generes avec l'Indication de l'Espece" I found a fourth and last species under the caption: "FAMILLE XIV HYDROPHILIENS" "Hydrophile, *Hydrophilus piceus*, Fab." This species was originally described by Linnæus, and there is no doubt that Latreille referred to *piceus* Linnæus, since it was customary at that time to cite Fabricius as author for Linnæan species. A reference to the works of Fabricius will show that he quotes both Linnæus and Geoffroy among his citations.

As the above work of P. A. Latreille was published five years prior to that of Leach, 1815, 'Edinburgh Encyclopedia,' IX, p. 96, I am of the opinion that *piceus* Linnæus and not *caraboides* Linnæus is thereby made the type of *Hydrophilus*. This is also supported by the opinion of the International Commission of Zoölogical Nomenclature, which, although the vote on it was not unanimous, I believe worthy of serious consideration: "Opinion 11, The Designation of Genotypes by Latreille, 1810." The following is a copy in part:

The Secretary has examined Latreille (1810) in search of evidence in support of the contention which Miss Rathbun states has been advanced, but he has failed to

find it. On the contrary he finds that Latreille distinctly says "avec l'indication de L'espèce," and not avec l'indication d'*une* espèce.

If all earlier authors had done as Latreille has here done, there would be very little confusion in nomenclature to-day, and from the evidence submitted no reason is apparent why Latreille's type designations should not stand as such.

It is self-understood that this opinion does not imply that Latreille's (1810) designations should take precedence over any earlier writings.

Opinion written by Stiles.

Opinion concurred in by 12 Commissioners: Blanchard, Dautzenberg, Graff, Jentink, Jordan, Joubin, Maehrenthal, Monticelli, Schulze, Stejneger, Stiles, Wright.

Opinion dissented from by 1 Commissioner: Hoyle who says: "I think that the evidence adduced by Stebbing (1898) from Latreille's writings shows that he did not use the word 'type' in the sense now attributed to it in zoological nomenclature. It was with him synonymous with 'example.'"

Not voting 2: Osborn, Studer.

In view of the above facts I feel satisfied that the type of *Hydrophilus* was clearly designated as *piceus* Linnæus by Latreille (1810). I also believe that Geoffroy should be given credit as author of the genus, for the following reasons: In 'Historie abregée des Insectes aux Environs de Paris,' 1762, I, pp. 180–184, Geoffroy erects the genus *Hydrophilus*, including the Linnæan species *piceus*, *caraboides*, and *fuscipes*, and describes two other forms, one of which is a nomenclatorially invalid polynomid and the other, *H. fulvus*, one of the few binomials (possibly accidental and subject to rejection) appearing in this work.

Unfortunately, Geoffroy, as was the case with many of the earlier authors, failed to designate a type for his genus. Therefore, it was left for some later author to make such a designation and this seems to have been clearly done by Latreille in 1810.

If we take into consideration the use of the name *Hydrophilus*, from the time it was referred to as a genus to the time Latreille designated the genotype, we shall find the following: *Hydrophilus* Geoffroy, 1762 and 1764, 'Hist. des Ins. envir. de Paris,' I, pp. 180–184, Pl. III, fig. 1 (figure of *piceus*); O. Müller, 1764, 'Fauna Insectorum Fridrichsdalina,' p. xvi (a copy ? of Geoffroy's diagnosis); Linnæus, 1767, 'Syst. Nat.,' 12th Ed., pp. 664–667 (*Hydrophilus* Geoffroy cited under *Dytiscus*); DeGeer, 1774, 'Mem. Ins.,' IV, pp. 365–381, Pl. XIV, figs. 1–11 (gives a detailed description of *Hydrophilus*. In his description of the genus, DeGeer refers to the drawings of *H. piceus* which are in detail and which show the component parts of the insect); Fabricius, 1775, 'Syst. Ent.,' pp. 228–279 (includes nine species under the generic heading); Geoffroy, 1799, 'Historie des Ins.,' pp. 180–184, Pl. III, fig. 1 (a second edition of his 1762 work); Fabricius, 1801, 'Syst. Eleuth.,' I, pp. 249–255 (includes

thirty species under the generic heading); P. A. Latreille, 1810, 'Consid. Gen.,' pp. 190 and 428 (on p. 190 a brief diagnosis of the genus is given, and on p. 428 the type of the genus is designated as *piceus*).

The treatment of *Hydrophilus* conflicts with *Hydrous*, for Leach (1815) lists the latter as follows: "*Hydrous* Leach from the Linnæan MSS. *Hydrophilus* Marsh. Latr. Fabr. sp. 1 *Piceus*, *Hydrophilus piceus* Fabricius, Marsham." If we consider the above designation of *piceus* as the genotype of *Hydrous*, this generic name must be placed in synonymy, and the next available name should be used for the genus. In this connection I have consulted the literature and find that *Hydrochara* Berthold, 1827, is the earliest valid name. In his work entitled 'Latreille's Naturliche des Thierreichs,' Berthold forms a table for the separation of the then-known genera of Hydrophilidæ, and (on p. 355) in the first part of the table he includes the genera *Spercheus*, *Hydrophilus* (*Hydrous* Leach), and *Hydrochara* (*Hydrophilus* Leach). A transcript of this paper appears in Thon, 1827–1829, 'Entomologisches Archiv.' The genus *Hydrochara*, which is erected by Berthold in the above publication, is based on M. Latreille's *Hydrochare*.[1] It is, therefore, my opinion that *Hydrochara* Berthold should replace *Hydrophilus* Leach, not of DeGeer and *Hydrous* of authors.

If the argument thus presented should prevail it will be necessary to change the citations in Leng's 'Cat. Coleop. of America North of Mexico,' p. 84, to read as follows: *Hydrophilus*, 2789 *triangularis* (Say), .90 *ater* (Oliv.), .91 *insularis* (Cast.); *Hydrochara*, 2793 *castus* (Say), .94 *richseckeri* (Horn), .95 *obtusatus* (Say), .96 *lineatus* (Lec.). It will also be necessary to change Bradley's key in 'A Manual of the Genera of Beetles of America North of Mexico,' 1930, p. 54, lines 5 and 10 to read: *Hydrophilus*, instead of "*Hydrous*," and *Hydrochara*, instead of "*Hydrophilus*."

In conclusion, I should like to call attention to the fact that if we ignore the 1762 edition of Geoffroy, as has been done by some authors, it will be necessary to change either the names of several of our well-known coleopterous genera or give credit to some later author for the erection of these genera.

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[1]See M. Latreille, 1825, 'Familles du Regne Animal,' p. 366.